

## A NEW GENUS OF LIMNEPHILIDAE

(Trichoptera)

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Recent collections of caddisflies sent to the writer have contained several interesting new species of Limnephilidae. Herein is described a new genus, remarkably different from others in the family, together with four new species. All are in genera which are rather rare in collections and are very poorly known. All localities are from the western montane region. Unless otherwise designated types of the new species are in the author's collection.

**Rossiana** Denning, new genus

This genus is remarkably distinctive from other described genera, in several respects it bears little resemblance to any other Limnephilid genus. Of the described genera it is probably nearest *Lepania* Ross, but differs greatly from that genus and others in many wing venational characters, in the very peculiar maxillary palpus and the genitalia.

Characteristics. General structure as for family. Head wide, ocelli prominent; postero-lateral wart elongate, slender, anterior warts small, circular, forming a triangle with median ocellus. First and second segment of labial palpi wide, flattened, ventral surface concave. Maxillary palpus (one present on specimen), with basal segment long, almost twice as long as second and third combined; a shallow elongate excavation occupies distal portion of basal segment, arising from near proximal end of cavity are the second and third segments, directed outwards at nearly right angles to basal segments, second segment slightly longer than third, fig. 1B. (Antennae, first pair of legs and one of second pair of legs missing from holotype of type species). Spur count on second and third pair of legs: 4-4; no spines present on last tarsal segment of hind leg. Fore wing, fig. 1A, practically same width throughout, anterior margin broadly rounded: stigma indistinct; oblique crossvein between Sc and margin; distally  $R_1$  sinuate and almost touching distal part of Sc, fork  $R_{2+3}$  considerably basad fork  $R_{4+5}$ ,  $R_2$  arising about midway discal cell, fork  $R_{4+5}$  arises beyond discal cell, discal cell narrow, short, shorter than pedicel; fork  $M_{1+2}$  considerably before crossvein r-m. Hind wing not excised, costal margin without hamuli;  $R_2$  arises about midway discal cell which is closed and shorter than pedicel,  $M_{1+2}$  divided, stem of M atrophied, most of  $Cu_2$  atrophied.

It is with pleasure that I name this new genus in honor of Dr. H. H. Ross, Illinois Natural History Survey, Urbana, Illinois, who has made so many noteworthy contributions to our knowledge of the Trichoptera.

GENOTYPE, *Rossiana montana*, new species.

**Rossiana montana** Denning, new species

*Male*: Length 9.5 mm. General color blackish. Head and thorax blackish, wings uniformly dark brown, legs long, fulvous, spurs a trifle lighter in color.

*Genitalia* as in fig. 1. Ninth segment annular, dorsal and ventral portions narrowed, lateral portion considerably expanded, sternal margin projected caudad as a wide truncate strap, best seen from ventral aspect, fig. 1D; setation sparse. Tenth segment projects caudad slightly beyond basal segment of clasper, from lateral aspect appears somewhat flattened, narrow throughout, distal margin curved slightly dorsal; seen from dorsal aspect, fig. 1C, cleft about midway, each lateral part truncate distally and only slightly divergent, mesal portion lightly sclerotized. Cerci, seen from lateral aspect, greatly constricted ventrally into a narrow finger-like process, quite closely appressed to each side of tenth tergite, and extending ventrad beyond it; when seen from dorsal aspect, fig. 1C, subtriangular. Clasper with basal segment massive, not much longer than broad, dorsal margin straight, ventral margin arcuate, ventral and distal margin bearing long fulvous setae, distal segment narrow, longer than basal segment, somewhat finger-like; seen from ventral aspect mesal margin of basal segment bears a short truncate mesad directed process, apical margin dentate; distal segment broadly curved mesad, ventral margin dentate, bearing minute setae. Aedeagus from ventral aspect, fig. 1E, short, not freely extensile, somewhat vasiform; arising from distal portion and projecting beyond distal margin is a dense mass of slender, acute, heavily sclerotized spines.

*Holotype*: Male. PASS CREEK, near summit of GIBBONS PASS. BITTERROOT NATIONAL FOREST, RAVALLI COUNTY, MONTANA, June 30, 1949. Elev. 6700 feet, (C. P. Alexander).

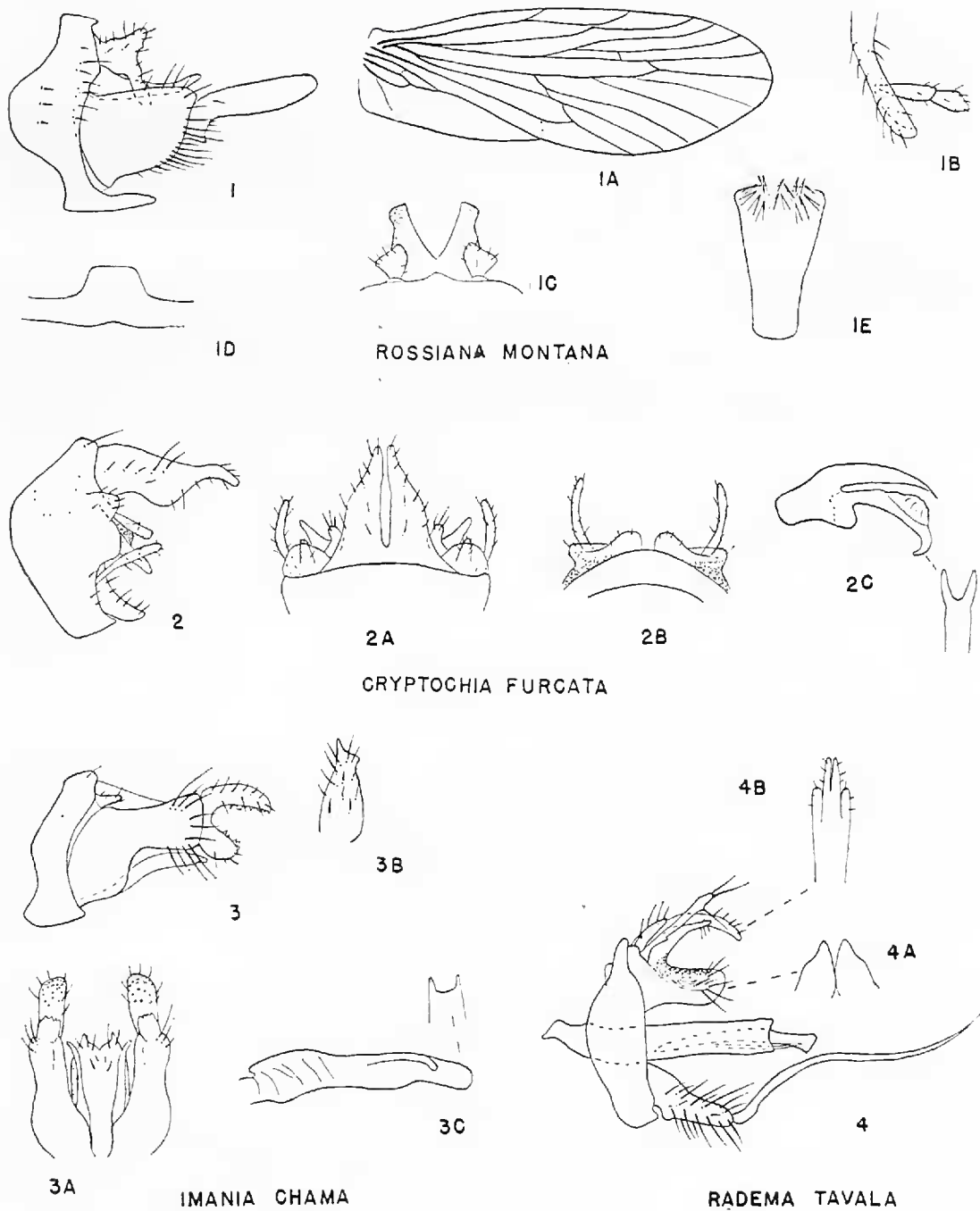
Dr. Alexander states that the collecting conditions were very definitely early spring. The above material was collected on the Montana side of the Continental Divide, which is about 15 miles west of the Big Hole Battlefield National Monument.

I would like to express my thanks to Dr. H. H. Ross who examined this specimen and who also expressed the opinion that it represented an undescribed genus and species.

**Cryptochia furcata** Denning, new species

In 1950 Ross erected a new genus, *Cryptochia*, to include a single species *C. pilosa* (Banks) which has been recorded from Washington, Oregon and Idaho. The present species, *furcata*, thus represents the second described species in the genus. On the basis of the tenth tergite, claspers, aedeagus and several other genitalic differences this species may readily be distinguished from *pilosa*.

*Male*: General characteristics essentially similar to those included in the generic characters as set forth by Ross. Length 8 mm. Head and thorax



EXPLANATION OF FIGURES

Fig. 1. *Rossiana montana*, male genitalia, lateral aspect; 1A, fore wing; 1B, maxillary palpus; 1C, cerci and tenth tergite, dorsal aspect; 1D, sternum of ninth segment, ventral aspect; 1E, aedeagus, ventral aspect. Fig. 2. *Cryptochia furcata*, male genitalia, lateral aspect; 2A, tenth tergite, dorsal aspect; 2B, claspers, ventral aspect; 2C, aedeagus, lateral aspect. Fig. 3. *Imania chama*, male genitalia, lateral aspect, 3A, claspers and tenth tergite, ventral aspect; 3B, left lateral lobe of tenth tergite, dorsal aspect; 3C, aedeagus, lateral aspect. Fig. 4. *Radema tavalala*, male genitalia, lateral aspect; 4A, ventral aspect of ventral process of tenth tergite structure; 4B, tenth tergite, dorsal aspect.

dark brown, antennae and wings brownish, legs fulvous. Venation very similar to that illustrated and described by Ross for *pilosa*. Eighth tergite bearing a number of rather long scattered setae.

*Genitalia* as in fig. 2. Ninth segment with tergum and sternum narrowed, lateral aspect considerably expanded. Tenth tergum reaching caudad beyond remainder, cleft nearly to base, fig. 2A; seen from lateral aspect ventral margin sinuate, apex greatly narrowed, directed slightly ventrad. Cerci small, ovate, lightly sclerotized. Arising from distal surface of segment, approximate to lateral margin of ninth segment there appears a heavily sclerotized structure as follows: (1) a large heavily sclerotized spine-like process, ventrad directed and acute apically, mesal surface extended mesad as a triangular caudad-directed plate; (2) a slender dorsal process, apically sub-acute and ventrad directed, apex with a few scattered setae. Claspers ventral in position, somewhat crescent-shaped, heavily sclerotized, projected caudad as a large broadly rounded process, best seen from ventral aspect, fig. 2B; dorsally clasper bears an apically blunt, lightly sclerotized filamentous process. Aedeagus, fig. 2C, consists of a dorsal pair of heavily sclerotized blades, apically acute and gradually curved ventrad; ventral portion consists of a rather massive heavily sclerotized blade, apically furcate, apex hamate, dorso-distal surface semi-membranous.

*Holotype*. Male. GLACIER NATIONAL PARK, MONTANA, Lake McDonald, Fish Lake Trail, July 3, 1949, (C. P. Alexander).

*Paratype*. Male. Selkirk Mts., Head of Sawmill Creek, West of Wycliffe, British Columbia. Elev. 6050 feet, July 22, 1950, (Hugh B. Leech). Deposited in the collection of the California Academy of Sciences, San Francisco, California.

#### *Imania chama* Denning, new species

This represents the seventh species in the genus described from the Nearctic region. Ross (1950) classified the species into four groups: *chama* belongs in the *tripunctata* group along with *tripunctata* Banks, *gnathos* Ross and *cascadis* Ross. On the basis of the male genitalia it can easily be distinguished from those species. The species is most closely related to *tripunctata* Banks, differing from it in the size and shape of the ventral style of the clasper, which, although variable in *tripunctata* is spine-like and not blade-like, the shape of the tenth tergite, the entirely different aedeagus and the absence of the apicodorsal lobe of the ninth tergite.

*Male*: Length 9 mm. Head, thorax, antennae blackish, femur dark brown, remainder of leg fulvous; wings dark brown except a narrow light spot along r-m, a larger white spot near fork of M and a light spot somewhat smaller where Anals join margin.

*Genitalia* as in fig. 3. Ninth segment narrow, annular, sternum wider than tergum. Tenth tergite divided into two lateral lobes, latero-apical margin produced into an acute apex when seen from dorsal aspect, fig. 3B,

from lateral aspect tergite appears rooflike. Cerci rather inconspicuous, leaflike from dorsal view. Clasper with basal segment massive, dorsal portion projected caudad at right angles to remainder, a dense cluster of long setae distally; dorsal ramus of apical segment ellipsoid from lateral aspect, from ventral aspect about same width throughout, black peglike teeth scattered irregularly on a trifle more than half the ventral surface, much more dense near apical margin; ventral ramus only slightly longer than broad, considerably narrower than width of dorsal ramus, only apical margin bearing a dense row of black peglike teeth; bladelike ventral style arising on meson from base of clasper, divergent and acuminate from ventral aspect, fig. 3A; broad, arcuate, apically subtruncate from lateral aspect. Aedeagus, fig. 3C, tubular, dorsal arms curved ventrad, apex truncate; from ventral aspect apex widely furcate.

*Holotype*: Male. ALBANY CO., WYOMING, Snowy Range Mts., outlet of Telephone Lake. Elev. 10,500 feet, July 29, 1950, (D. G. Denning).

#### *Radema tavala* Denning, new species

This species bears closest resemblance to *R. incerta* (Banks), but can easily be separated from it by differences in the aedeagus, tenth tergite and apical segment of clasper.

*Male*: Length 7 mm. Head, thorax and antennae black, legs fuscous, wings brownish. Spurs 1-2-4.

*Genitalia* as in fig. 4. Ninth segment with dorsum greatly reduced, projecting cephalad from dorsal portion is a thin flap-like process. From lateral aspect tenth tergite consists of the following processes: (1) a dorsal pair of arcuate bladelike processes, (2) a pair of thin filamentous processes, slightly widened distally, (3) a ventral pair of large, ventrally concave processes, a heavily sclerotized lateral ridge may cause this process to appear divided, a cluster of rather long setae present at apex of this ridge; from dorsal aspect dorsal processes (1) are elongate, closely appressed, bearing a few minute laterad directed setae, lying alongside are a pair of thin processes which arise from the large ventral piece, fig. 4B; from ventral aspect large ventral process (3) appears triangular, with apices slightly divergent, fig. 4A. Cerci small, slender throughout, heavily sclerotized. Clasper with basal segment elongate, narrowed distally; apical segment long, rod-like, sinuate, sharply acuminate. Aedeagus long, tubular, bearing a pair of apically acute, fairly long, slender ventral arms.

*Holotype*. Male. Head of METOLIUS RIVER, OREGON, May 21, 1950, (Fender & Jewett).

#### LITERATURE CITED

ROSS, HERBERT H.

1950. Synoptic notes on some nearctic Limnephilid caddisflies (Trichoptera, Limnephilidae). *American Midland Naturalist*, 43(2):410-429, 22 figs.